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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/484,650	01/18/2000	Thomas Ahrndt	P99.2498	9932

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EXAMINER

VOLPER, THOMAS E

ART UNIT	PAPER NUMBER
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2665

19

DATE MAILED: 04/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/484,650

Applicant(s)

AHRNDT ET AL.

Examiner

Thomas Volper

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 28 October 2003 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1 and 5 have been considered but are moot in view of the new ground(s) of rejection.

3. Applicant's arguments filed 28 October 2003 have been fully considered but they are not persuasive. With respect to claims 6 and 10, Applicants have presented no specific arguments. In response to Applicants' argument regarding claim 12, that "at best, Yamano discloses a circuit operated in a reduced processing state, whereas the claims of the present application require that the remaining parts of the high-bit-rate transmission device are not in an operative state until the signaling tone detector detects a pilot tone", the Examiner respectfully disagrees. Firstly, Applicants disclose a "power-down mode" in which certain parts are "not operative and *consume little or no power*" (page 7, lines 14-15 of the Specification). It is clear that, according to Applicants' own definition, being in a non-operative state includes running at reduced power. The reduced processing state of Yamano provides an equivalent mode to the non-operative state

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of the present invention. Specifically, Yamano discloses “when no packet data is being received, there is a statistically significant reduction in the amount of processing required within receiver circuit 400. This reduction in processing can be used to reduce power consumption.” (col. 15, lines 51-55). Secondly, the limitations “a plurality of components for performing data transmission, operating separately from the signaling tone detector” and “the plurality of components of the high-bit-rate transmission device are switched into an operative state only when the pilot tone is detected” of claim 12 does not exclude operation of parts other than the signaling tone detector such as Applicants claim (the paragraph regarding claim 12 in the Remarks). The language of claim 12 simply is not restrictive to *all* parts other than the signaling tone detector when stating which parts of the device are operative only when the signaling tone is detected. Thus, Applicants’ amendment has not overcome the 35 U.S.C. 102(e) rejection of claims 6 and 8-14.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 6 and 8-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamano et al. (US 6,075,814).

Regarding claims 6, 10 and 12, Yamano discloses a high-bit-rate device at a subscriber

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side (1001) and a high-bit-rate device at a telephone exchange (1004) connected by a high-bit-rate connection (1012). The system operates in accordance with a conventional modem protocol, such as xDSL (col. 7, lines 17-20). A non-idle signal detector (401) in receiver circuit (400) detects an easily detected signal, such as a pure tone, which is used to signal the presence of packet data. This enables the full processing mode of receiver circuit (400) (col. 14, lines 13-42). The pure tone of the easily detected signal represents the pilot tone of the present invention. In addition, Yamano discloses that each of the modems (1001) and (1004) may implement the features of the receiver circuit (400) (col. 19, lines 10-13).

Regarding claim 8, Yamano discloses that the receiver circuit receives a continuous analog signal. The receiver circuit monitors this continuous analog signal (col. 3, lines 44-54).

Regarding claim 9, Yamano discloses that the non-idle detector (401) may periodically be enabled during predetermined time intervals (col. 15, lines 26-32).

Regarding claims 11 and 13, Figure 4 shows a resampler (302) and an equalizer (303), which are both digital signal processing components.

Regarding claim 14, Yamano discloses a reduced processing mode used during the absence of the easily detected signal on the communication channel (col. 14, lines 29-42)

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nimmagadda (US 6,426,961) in view of Yamano et al. (US 6,075,814) and Bartkowiak (US 6,665,350).

Regarding claims 1 and 5, Nimmagadda discloses an ADSL system (Fig. 5) in which a subscriber uses a computer (30) and an ADSL modem (28) for use with ADSL system (106). An ADSL system makes use of twisted pair wiring to provide voice service and data service (col. 1, lines 19-25). The ADSL system also includes, at the other end of the subscriber voice and data line, a central office switch (16) connected to a PSTN (108). The ADSL system also includes an ADSL modem (18) at the telephone switch side that connects to an ISP (108) for connection to the Internet. Fig. 5 demonstrates that the core region of the telephone switch can be bypassed by sending data traffic through modem (18) to the ISP. This ISP represents the access device of the present invention. Nimmagadda does not expressly disclose that the ADSL modem (28), which meets the limitation of a high-bit-rate data transmission device, operates only a signal tone detector to detect an occurrence of a pilot tone in an upstream or downstream channel indicating a beginning of data transmission outside the context of data transmission, and operating the remaining parts only when the occurrence of the pilot tone is detected. Yamano discloses a receiver circuit (400) of a modem that includes a non-idle detector (401). When the non-idle detector detects a pure tone, which represents the presence of data, the receiver circuit is enabled in full processing mode (col. 14, lines 20-29). When no data is detected, the receiver circuit is operated in a reduced processing mode (col. 14, lines 29-42). Yamano fails to expressly disclose that only the signal tone detector is operated before the detection of a pilot tone, since it is evident from comparing the description of a reduced processing mode with Figure 4 that the A/D

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converter (301) and the sample buffer (308) are still operative when the receiver is in reduced processing mode. Bartkowiak discloses a tone detector that includes the functions of A/D conversion, sampling and detecting a tone in one device (see Figures 2A and 2B). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the receiver circuit of Yamano, wherein the non-idle detector, A/D converter and sample buffer were embodied in one tone detector component such as in the invention of Bartkowiak, in the ADSL modems (18) and (28) of Nimmagadda so that the modems would only be acting in full capacity when high-bit-rate data was being transmitted on the subscriber line. One of ordinary skill in the art would have been motivated to combine the non-idle detector, A/D converter and sample buffer into one component since the A/D converter and sample buffer provide functions that are necessary for the non-idle detector to detect the pure tone, and thus would be necessary to be operative even when the receiver circuit was in reduced processing mode. One of ordinary skill in the art would have been motivated to use the receiver circuit with a combined detector, A/D converter and sample buffer in a high-bit-rate modem to provide efficient processing and to reduce power consumption by the modem.

Regarding claim 3, see aforementioned teaching regarding claim 1. Additionally, Yamano discloses that the receiver circuit receives a continuous analog signal. The receiver circuit monitors this continuous analog signal (col. 3, lines 44-54).

Regarding claim 4, see aforementioned teaching regarding claim 1. The teaching of Nimmagadda in view of Yamano et al. and Bartkowiak above discloses an A/D converter for converting the analog signal to digital. Specifically, Bartkowiak discloses a component (202) for sampling an analog signal at discrete time intervals (see Figure 2A).

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamano et al. (US 6,075,814) as applied to claims 6 and 8-14 above, and further in view of Wallace et al. (US 6,353,628).

Regarding claim 7, Yamano discloses digital signal processing components such as resampler (302) and equalizer (303) that are switched on after detection of a pilot tone (col. 14, lines 29-42). Yamano also discloses an analog to digital converter, A/D (301), which comprises the analog and digital interfaces of claim 7. In order for data transmission to occur after detection of the pilot tone, this A/D converter would have to be switched on so that the receiver could process the incoming signal. Yamano fails to expressly disclose a line driver that is switched on after detection of a pilot tone. Wallace discloses that line terminating equipment (LTE) typically comprises a line driver that is coupled to a voltage supply and arranged to amplify signals to be applied to a wireline resource in a DSL communication system (col. 4, lines 31-37). Wallace also discloses that the line driver is re-enabled after coming out of a dormant mode due to inactivity (col. 8, line 43 – col. 9, line 14). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to provide a line driver in the system of Yamano, and to switch this line driver into an operative state upon detection of a pilot tone. One of ordinary skill in the art would have been motivated to do this in order to make sure data transmissions in the system would be sent with enough power to be successfully transmitted to a receiving circuit.

Conclusion

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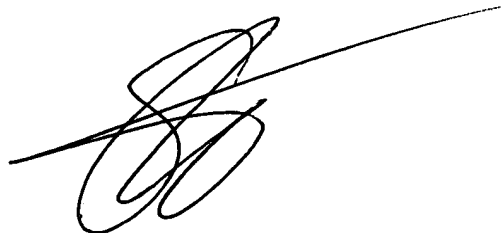
9. Any inquiry concerning this communication, or earlier communications from the examiner should be directed to Thomas Volper whose telephone number is 703-305-8405 and fax number is 703-746-9467. The examiner can normally be reached between 8:30am and 6:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached at 703-308-6602. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Thomas E. Volper



March 23, 2004



STEVEN H. D NGUYEN
PRIMARY EXAMINER